

VOYTKEVICH, G. V.

CA

8

Age of the earth. G. V. Voytkovich. *Doklady Akad. Nauk S.S.S.R.* 77, 461-4 (1961); cf. I. B. Starik, *Izvest. Akad. Nauk. Ser. Geofiz. Gess.* 1937, No. 2.—On the basis of the ratios $^{210}\text{Po}/^{210}\text{Pb}$ and $^{210}\text{Po}/^{210}\text{Pb}$, Starik calculated the astrophys. age of the Earth to be 3×10^9 years, indirectly confirmed by calens. from the He and Pb content of Fe meteorites. These calens. are improved by using revised decay consts. (λ) of Ac-U (0.72×10^{-10} years $^{-1}$) and U (1.82×10^{-10} years $^{-1}$), combined with the data from A. Nier's recent mass spectrographic detns. in the Pb family (cf. C.A. 32, 6944⁹). The equation for the abs. age of Ac-U, t , in relation to the const. of radioactive decay is $t = [1/43420 \lambda_{\text{Ac-U}} \log_{10}((\text{Ac-U})_{\text{now}} + \text{Pb}^{210})/(\text{Ac-U})_{\text{now}}]$. It was applied to data given previously by A. Persman, and I and W. Noidack, with 6 and 5.7×10^9 years resulting. This corresponds to Paneth's results for meteoric irons ($4-6.8 \times 10^9$ years) with a max. of frequency at 5×10^9 years. The min. of the astrophys. age of the Earth is approx. 3.3×10^9 years, in agreement with A. Holmes' calens. (C.A. 40, 5589¹). Knowledge of the geologic age of the Earth is restricted to detns. of radioactivity in acidic portions of the crust (granites in the siallitic complexes) which have undergone much metamorphism. The real age of these accessible crust formations may be 2×10^9 years, for the magmatism and metamorphism of oldest rocks. The time lag between the original liquid state of the plane and the first formation of a siallitic crust was relatively short; Jeffries discussed the condensation and vertical convections in the cooling liquid mass as having taken place in only 15,000-20,000 years. As the "prehistoric" period of the Earth, V. presumes the period from 3.3 to 2×10^9 years. W. Rittel

VOYTKOVICH, G. V.

May/Jun 53

USSR/Geology - Radioactivity

"Geochemical and Geological Value of Radioactivity," G. V. Voytkovich

Iz Ak Nauk SSSR, Ser Geol, No 3, pp 17-33

Discusses the constancy of radioactive decay and the possibility of nuclear chain reactions in the earth's crust. Proposes that the presence of radioactive elements in the earth would be impossible without their preliminary synthesis in the past.

265 T55

VOYTKEVICH, G.V.

Brian Mason's book "Principles of geochemistry" [in English]. Izv. AN
SSSR, Ser.geol. no.6:125-128 N-D '53. (MLRA 7:1)
(Geochemistry) (Mason, Brian)

VOYTKOVICH, G. V.

"Significance of Geochemistry of Isotopes in the Solution of Certain Geological Problems," Tr. Zrirovzhsk. gorno-rud. in-ta, Geol. i mineralogiya, No 1, pp 32-44, 1954

For most elements the isotopic composition is constant in the limits of sensitivity of mass instruments. Elements with non-constant isotopic composition are divided into two groups: (1) elements of light weight -- H, B, C, N, O, S, and Cl; and (2) radioactive elements and products of their decay -- U, Pa, Th, Ac, Ra, Rn, Po, Bi, Sm, Eu, La, Rb, K, Pb, Os, Hf, Sr, Ca, and Ar. Phenomena varying the isotopic composition of elements are divided into physicochemical, biochemical, and spontaneous decay of atoms. Physicochemical division of light elements can occur during diffusion (H-14 and H-15), during exchange of aggregate states of substance (H-1, H-2, O-16, O-18 in waters), during exchange chemical reactions (C-12, C-13, C-13, O-16, O-18). Biochemical processes disrupt the isotopic composition of certain biophilous elements (C-12, C-13). (RZhGeol, No 4, 1955)

Sum. No. 681, 7 Oct 55

VOYTKEVICH, G. V.

USSR/ Geology - Radiation

Card 1/1 Pub. 46 - 1/ 7

Authors : Voytkovich, G. V.

Title : Present-day problems in radiation geology

Periodical : Izv. AN SSSR. Ser. geol. 5, 3 - 20, Sep - Oct 1954

Abstract : The article deals with radiation geology in general and defines the problems involved in a new way. In the light of present-day data on isotopes and atomic decomposition the following points are elucidated: age of the elements discovery and study of the oldest parts of the earth's crust, establishing an absolute chronology for geological history, and the origin and changes in the isotope composition of the earth's chemical elements. Sixty references: 33 Soviet; 27 English-language (1934 - 1953). Tables.

Institution:

Submitted: February 18 1954

VOYTKOVICH, G.V.

Present problems in radiogeology. Izv. AN SSSR. Ser. geol. 19:
3-20 S-0 '54. (MLRA 7:10)
(Radioactivity) (Geological time) (Radiocarbon dating)

VOYTKEVICH, G. V.

5000

500 ¹ **Isotopic composition of lead and the problem of primary magmas** G. V. Voytkovich. *Izvest. Akad. Nauk S.S.S.R., Ser. Geol.* 1955, No. 4, 60-6. — Part of the radiogenic Pb detd. by isotopic studies might have formed in a medium of high radioactivity during the history of the earth. This shows the great antiquity of the chem. stratification of the planet on a highly radioactive core and a weakly radioactive sub-core. Isotopic data favored a primary magma, close to basalt in compn. A table of isotopic compns. of the Pb in rocks and meteorites is provided. There is also a table giving results of calculations of accumulation of radiogenic Pb during 4500 million years in rocks, the radioactivity of which is known. 27 references. (U.S. Magy)

15 22

VOYTKEVICH, G.V.

"Isotope geology." Kalervo Rankama. Reviewed by G.V.Voitkevich.
Izv. AN SSSR, Ser. geol. 20 no.6:102-107 N-D '55. (MLRA 9:2)
(Isotopes) (Nuclei, Atomic) (Rankama, Kalervo, 1913-)

VOYTKEVICH, G.V.

~~Correlation of pre-Cambrian deposits by radioactivity data.~~
Dokl.AN SSSR 103 No.5:889-892 Ag '55. (MLRA 9:1)

1.Krivershskiy gornerudnyy institut g.Krivy Reg. Predsta-
vleno akademikem D.I.Shcherbakovym.
(Geology, Stratigraphic) (Geological time)

VOYTKEVICH, Georgiy Vitol'dovich; BARANOV, V.I., redaktor; GODOVIKOVA, L.A.,
redaktor izdatel'stva; PENKOVA, S.A., tekhnicheskii redaktor

[Radiogeology and its significance in learning the history of the
earth] Radiogeologiya i ee znachenie v poznanii istorii Zemli.
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane neдр,
1956. 110 p. (MLBA 9:11)
(Nuclear geophysics)

VOYTKEVICH, G.V., kandidat geologo-mineralogicheskikh nauk.

The oldest parts of the earth is crust. Priroda 45 no.9:89-92
S '56. (MIRA 9:10)

1. Krivorezhskiy gornorudnyy institut.
(Geology, Stratigraphic)

VOITKEVICH, G.V.

"Nuclear geology" [in English]. Reviewed by G.V. Voitkevich.
Izv. AN SSSR, Ser. geol. 22 no.1:126-129 Ja '57. (MLRA 10:3)
(Nuclear geophysics)

BELOKRYIS, L.S.; VOYTKEVICH, G.V.; CHERNOVSKIY, M.I.

Scientific and technical conference at the Krivoy Rog Mining
Institute. Nauch.dokl.vys.shkoly; geol.-geog.nauki no.1:263-265
'58. (MIRA 12:2)

1. Krivorozhskiy gornorudnyy institut, kafedra obshchey geologii.
(Geology)

26-58-5-17/57

AUTHOR: Voytkavich, G.V., Candidate of Geological and Mineralogical Sciences (Krivoy Rog)

TITLE: A Unified Geochronology of the Pre-Cambrian era (Yedinaya geokhronologiya dokembriya)

PERIODICAL: Priroda, 1958, ⁴⁷Nr 5, pp 77-79 (USSR)

ABSTRACT: The article represents a generally accepted geochronology of the pre-Cambrian period and the chronological growth of minerals during that epoch. There are 2 tables and 13 references, 4 of which are Soviet, 1 German, 8 American.

AVAILABLE: Library of Congress

Card 1/1 1. Geology - Pre-Cambrian 2. Minerals - Geological chronology

VOYTKEVICH, G.V.

~~Pre-Cambrian tectonic cycles. Nauch.dokl.vys.shkoly; geol.-geog.~~
nauki no.1:64-73 '59. (MIRA 12:6)

1. Krivorozhskiy gorno-rudnyy institut, kafedra obshchey geologii.
(Geology, Structural)

3 (8)

AUTHORS: Amirkhanov, Kh. I., Academician of the SOV/20-126-1-44/62
AS AzerbSSR, Bartnitskiy, Ye. N., Brandt, S. B., Voytkovich,
G. V.

TITLE: On the Migration of Argon and Helium in Certain Rocks and
Minerals (O migratsii argona i geliya v nekotorykh porodakh
i mineralakh)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1,
pp 160-162 (USSR)

ABSTRACT: The A- and He-separation from one and the same sample was
investigated in order to define precisely the loss mechanism
of the two radiogenic gases mentioned in the title. The authors
used for this purpose carbonaceous schist, hornblende, and
Precambrian pyroxene. They used the mass-spectroscopic method
of isotopic dilution (Ref 1) which was somewhat modified for
this purpose. The measuring results are given in figures 1-3.
The diffusion coefficients D and in several cases the activation
energy E can be determined from these curves. The formula of
the spherical diffusion (2) was used for the calculation of D.

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The quantity of the radiogenic A^{40} was measured by the usual

On the Migration of Argon and Helium in Certain
Rocks and Minerals

SOV/20-126-1-44/62

method; the He^4 -quantity according to the formula (1).
Figure 1 shows curves for the carbonaceous schist, figure 2
for hornblende from granite-pegmatite, figure 3 for pyroxene.
Equal D-values of argon and helium for hornblende and
pyroxene prove that the migration of the radiogenic gases is
caused by other reasons, not by the nature of the atoms
 A^{40} and He^4 . It is possible that the nodal vacancies (holes)
shift in the crystalline lattice of the mineral. Their
quantity increases with the temperature rise. They seize and
"transport" the atoms of radiogenic gases. A certain
difference of the D-value for A and He in the carbonaceous
schists is apparently due to the occurrence of several phases
in these rocks in which the gases may be differently
distributed. The boundary layers between the individual phases
are apt to cause considerable losses in A^{40} and He^4 as well
in the case of low temperatures. The E- and D-values for
pyroxene prove that the radiogenic gases are fully preserved
in this rock. The authors draw from the aforesaid facts the conclusion that
the absolute age is to be determined by the argon- and helium

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On the Migration of Argon and Helium in Certain
Rocks and Minerals

SOV/20-126-1-44/62

method only in the case of samples which were first
investigated for the preservation of the radiogenic gases.
There are 3 figures and 1 Soviet reference.

ASSOCIATION: Dagestanskiy filial Akademii nauk SSSR (Dagestan Branch of
the Academy of Sciences, USSR)

SUBMITTED: December 29, 1958

Card 3/3

VOYTKEVICH, G.V.; PROKHOROV, V.G.; KHAYRETTINOV, I.A.

Nature of thermoelectric effect in minerals. Dokl. AN SSSR 162
no.1:169-172 My '65. (MIRA 18:5)

1. Krasnoyarskaya kompleksnaya laboratoriya Instituta geologii i
geofiziki Sibirskogo otdeleniya AN SSSR. Submitted January 13,
1965.

VOYTKEVICH, G.V., dotsent, kand.geologo-mineral. nauk

Principles for the over-all division and correlation of the
Pre-Cambrian. Sbor. nauch. trud. KGRI no.7:29-44 '59.

(Geology, Stratigraphic)

(MIRA 16:9)

PHASE I BOOK EXPLOITATION

BR
SOV/5970

Voytkovich, Georgiy Vitol'dovich

Problemy radiogeologii (Problems in Radiogeology) Moscow, Gosgeoltekhizdat,
1961. 350 p. 2000 copies printed.

Ed. : L. V. Komlev, Professor; Ed. of Publishing House: L. M. Samarchyan;
Tech. Ed.: V. V. Bykova.

PURPOSE: This book is intended for geologists and geophysicists.

COVERAGE: The book is a survey of the development of nuclear geology over the last 25 years and a summary of findings on natural nuclear transformations in the body of the earth as manifested in geological processes. Though nuclear geology is being applied to the study of cosmic, cosmogonic, geochemical, geochronological, geophysical, and geological problems, the present volume is limited to a discussion of the absolute geochronology and energetics of the earth, including a detailed analysis of the geological factors involved in nuclear-geological methods of determining the age of the minerals and rocks. In the USSR, studies in nuclear geology are directed and coordinated by the Commission on the

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Problems in Radiogeology

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Determination of the Absolute Age of Geological Formations, Academy of Sciences USSR (AS USSR). The Commission publishes a bulletin and the proceedings of its yearly meetings. The following research institutions are engaged in nuclear geological research: Radiyevyy institut AN SSSR im. V. G. Khlopina (Radium Institute imeni V. G. Khlopina, AS USSR) in Leningrad, directed by I. Ye. Starik and L. V. Komlev; Laboratoriya dokembriya AN SSSR (Precambrian Laboratory AS USSR) in Leningrad, directed by A. A. Polkanov and E. K. Gerling; VSEGEI (All-Union Scientific Research Institute of Geology) in Leningrad, directed by N. I. Polevoy; Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, AS USSR) in Moscow, headed by A. P. Vinogradov; Department of Geochemistry, Moskovskiy gosudarstvennyy universitet (Moscow State University); and the comparatively new Laboratory for the Determination of Geological Age (Moscow) of the IGEM (Institute of Geology of Mineral Deposits, Petrography, Mineralogy, and Geochemistry, AS USSR), organized by I. G. Gurvich and headed by G. D. Afanas'yev, Corresponding Member, AS USSR. The Dagestanskiy filial AN SSSR (Dagestan Branch, AS USSR)

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Problems in Radiogeology

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in Makhachkala has developed an original method of mass spectrometric determination of small quantities of argon which has accelerated geological time determinations. The Dagestan Branch carries on extensive studies in argon determination of geological rock age under the direction of Kh. I. Amirkhanov. Scientists prominent in nuclear geological research are Ye. S. Burkser, Institut geologicheskikh nauk AN SSSR (Institute of Geological Sciences, AS USSR), Kiyev; N. P. Samenko, in charge of a special commission for coordinating studies on geological age determinations in the Ukraine; V. V. Cherdyntsev, in charge of nuclear geological research at Kazakhstan University; M. M. Rubinshteyn, in charge of absolute geological age determinations at the Institute of Geology, Academy of Sciences Gruzinskaya SSR; L. N. Ovchinnikov, in charge of geological age determinations at the Ural'skiy filial, AN SSSR (Ural Branch AS USSR); and M. A. Garris, in charge of the Bashkirskiy filial AN SSSR (Bashkir Branch, AS USSR). The following participated in the preparation of the book: L. V. Komlev, Professor; D. I. Shcherbakov, Academician; G. D. Afanas'yev, Corresponding Member, AS USSR; A. B. Ronov, Professor; and V. I. Baranov, Professor. There are approximately 575 references, of which approximately one-third are Soviet and the remainder English, German, French, Polish, Italian, and Spanish.

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Problems in Radiogeology

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Problems in Radiogeology

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AVAILABLE: Library of Congress

SUBJECT: Geology

Card 5/5

MM/wrc/gmp
5-29-62

VOYTKEVICH, Georgiy Vitol'dovich; KOMLEV, L.V., prof., red.; KOMLEV, L.V.,
red.; SAMARCHYAN, L.M., red. izd-va; BYKOVA, V.V., tekhn. red.

[Problems of nuclear geology] Problemy radiogeologii. Red. L.V.
Komlev. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i
okhrane nedr, 1961. 360 p. (MIRA 15:1)
(Nuclear geophysics) (Geological time)

VOYTKEVICH, G.V.; ANOKHINA, L.K.

Age of some rock complexes from the Krivoy Rog iron ore area.
Geokhimiia no.2:185-187 '61. (MIRA 14:3)

1. Dagestanskiy filial AN SSSR, Makhachkala.
(Ingulets Valley—Rocks)
(Geological time)

VOYTKEVICH, G.V.

Some critical remarks on I.U. M. Sheimann's article "Oldest platform structures and their importance for general tectonics." Sov. geol. 3 no.6:156-159 Ja '60. (MIRA 13:11)

1. Dagestanskiy filial AN SSSR.
(Geology, Structural)
(Sheimann, I.U.M.)

VOYTEKOVICH, G.V.

Traces of ancient life on the earth. Sov. geol. 3 no.4:3-22 Ap '60.
(MIRA 13:11)

1. Dagestanskiy filial AN SSSR.
(Paleontology)

MANZHELNY, M.Ye.; VOYTENKO, L.V.

Electrolytic reduction of acrylic acid. Zhur.fiz.khim. 34 no.1:
27-31 Ja '60. (MIRA 13:5)

1. Kishinevskiy gosudarstvennyy universitet.
(Acrylic acid) (Reduction, Electrolytic)

VOYTKEVICH, Marian Aleksandrovich

Creative power is a perpetual motivating force. Izobr.i rats.
no.3:30-32 Mr '60. (MIRA 13:6)

1. Glavnyy inzhener stavropol'skogo stankostroitel'nogo zavoda
"Krasnyy metallist".
(Inventions)

VOITKEVICH, Mikhail Mikhailovich

Rukovodstvo po tekhnicheskoi eksploatatsii samoletov i motorov dlia aeroklubov, i shkol Osoaviakhima. [Manual on technical exploitation of airplanes and motors for aeronautical clubs and schools of Osoaviakhim]. Sostavili Voitkevich M.M. i Smolin A.P., pod red. Smurova I.K. Moskva, Izd. TSS Soiuza Osoaviakhim SSSR, 1936, 178 p. illus., tables, diagrs.

DLC: TL679.V562

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress Reference Department, Washington, 1952, Unclassified

TSIRKEL', T.M.; SOLOV'YEVA, N.P.; VOYTKEVICH, S.A.

Preparation of 1,6-hexanediol from hexamethylenediamine. Trudy
VNIISNDV no.6:15-17 '63. (MIRA 17:4)

VOYTKEVICH, S. A.

"Indirect Electrical Reduction of Oxalic and Salicylic Acids." Thesis for degree of Cand. Chemical Sci. Sub. 10 Jun 49, All-Union Sci Res Inst of Synthetic and Natural Essential Oils, Ministry of Food Industry USSR.

Summary 82, 18 Dec 52, Dissertations Presented For Degrees in Science and Engineering in Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

VOYTKEVICH, S. A.

Carbon Compounds

Role of polarity of organic compounds in electro-reduction processes on mercury cathode.
Zhur, fiz, khim. 16, no. 6, 1952.

Monthly List of Russian Accessions. Library of Congress. November 1952. Unclassified.

VOYTKEVICH, S.A.

OSIPOVA, V.P.; VOYTKEVICH, S.A., kandidat tekhnicheskikh nauk; REYMGACH, B.Ye.

New methods for determining the tenacity of scents and perfume compositions. Masl.-zhir.prom. 17 no.10:22-25 '52. (MIRA 10:9)

1. Institut duahistykh veshchestv Glavparfymera.
(Perfumes)

USSR/Chemistry - Electrochemistry

Jun 52

"Role of the Polarity of Organic Compounds in Processes of Electroreduction at a Mercury Cathode," S.A. Voytkovich, Inst of Synthetic and Natural Essential Oils, Moscow

"Zhur Fiz Khim" Vol XXVI, No 6, pp 869-873

Org compds are reduced at polarized cathodes only in cases when the whole mol or a part of it has a sufficient polarity. This polarity must as a rule exceed that of water. When several polar groups are present in a mol, reduction does not depend on the total dipole moment, but that of the group

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being reduced. The inductive effect of other polar groups must be considered here. Reduction is easier when the dipole moment is higher: Aliphatic satd aldehydes and ketones are not reduced very intensively, unsatd alpha-beta aldehydes are reduced easily, and aromatic mononitro compds very easily. Unsym hydrocarbons with one double bond, fatty carboxylic acids, and fatty alcs are not reduced at all.

220731

1. VOITKEVICH, S. A.
2. USSR (600)
4. Almond Oil
7. Crystallization of almond oil. Priroda 42, no. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

VOYTKEVICH, S.A.

Polarity of organic compounds in the processes of electroreduction
on mercury cathode. Trudy VNIISHDV no.2:18-19 '54. (MIRA 10:7)
(Reduction, Electrolytic) (Cathodes)

VOYTKEVICH, S.A.

Production of alkali metal alcoholates by means of interaction
of alcohols and amalgams obtained by electrolysis. Trudy VNIISNDV
no.2:22-24 '54.

(Alcoholates) (Electrolysis)

(MLRA 10:7)

VOYTKEVICH, S.A.,

OSIPOVA, V.P.; VOYTKEVICH, S.A.; REYNBACH, B.Ya.

New method for determining the stability of perfumes and scented
products. Trudy VNIISNDV no.2:89-93 '54. (MIRA 10:7)
(Perfumes) (Odorous substances)

Voytkovich, S.A.

SERPINSKIY, V.V.; VOYTKEVICH, S.A.; LYUBOSHITS, N.Yu.

Determination of the saturated vapor pressure of several fragrant
substances. Trudy VNIISNDV no.2:103-113 '54. (MLRA 10:7)
(Odorous substances) (Vapor pressure)

VOYTKEVICH, S.A.; KHOMYAKOV, V.G.

Electrochemical regeneration of chromic acid without using
diaphragm. Trudy VNIISNDV no.2:153-154 '54. (MLPA 10:7)
(Chromic acid) (Electrolysis)

VOITKEVICH, S. A.

USSR/Chemistry

Card 1/1

Authors : Serpinskiy, V. V., Voytkovich, S. A., and Lyuboshits, N. Yu.

Title : The pressure of saturated vapor of certain odoriferous substances. Part 2. -

Periodical : Zhur. Fiz. Khim., 28, Ed. 5, 810 - 813, May 1954

Abstract : The pressures of saturated vapor of benzyl acetate, cinnamic alcohol, phenylethyl alcohol, alpha-terpineol and indole were investigated by the effusion method at 10 - 55°. It was shown that the values obtained at the investigated temperatures could be quite accurately expressed by the Clausius-Clapeyron equation and integrated under the assumption of a constant concealed heat of evaporation (sublimation). Nine references: 4-USSR, 2-German since 1923 - 1928, 2-English, 1-USA. Table, graphs.

Institution : All-Union Scient. - Res. Institute of Synthetic and Natural Odiferous Substances, Moscow.

Submitted : July 13, 1953

USSR/ Chemistry - Physical chemistry

Card 1/1 : Pub. 147 - 14/22

Authors : Serpinskiy, V. V.; Voytkovich, S. A.; and Lyuboshits, N. Yu.

Title : Determination of pressure of saturated vapor of certain odoriferous substances

Periodical : Zhur. fiz. khim. 28/11, 1969-1974, November 1954

Abstract : The pressures of saturated vapor of phenylacetic aldehyde, methyl ether of citric acid, citrenellol, cyclamen-aldehyde, p-acetylanisole and tibetolide was measured by the effusion method at 10 - 60° C. The results obtained are tabulated. A saturated vapor pressure table, compiled for seventeen odoriferous substances, is included. Twenty references: 7-USSR; 4-USA; 2-German; 2-French; 1-English and 4-Swiss (1899-1954). Titles; graphs.

Institution : All-Union Institute of Synthetic and Natural Odoriferous Compounds, Moscow

Submitted : March 16, 1954

Voytekevich, S.A.

FRIDMAN, Rudol'f Arkad'yevich; MASLOVA, Ye.F., redaktor; KNUNYANTS, I.L., akademik, retsenzent; VOYTEKEVICH, S.A., kandidat khimicheskikh nauk, retsenzent; LOSHAKOV, P.Ya., inzhener, redaktor, retsenzent; CHEBYSHEVA, Ye.A., tekhnicheskii redaktor

[Perfumery] Parfumeriia. Izd. 2-e, perer. i dop. Moskva, Pishchepromizdat, 1955. 526 p. (MLRA 9:4)
(Perfumery)

VOYTKEVICH, S. A.

U S S R .

Stability of perfume scent S. A. Voytkovich *Izvestiya
Akadem. Nauchn. Prom. (10, No. 2, 19-24 (1968))* — A review is
given of the influence of perfume compn. on its phys. sta-
bility (I) and fixation, and methods for the improvement of I.
Vladimir N. Krukovsky

SERPINSKIY, V.V.; VOYTKEVICH, S.A.; LYUBOSHITS, N.Yu.

Determination of saturated vapor pressure for certain aromatic principles.
Part 4. Zhur.fiz.khim. 29 no.4:653-657 Ap '55. (MIRA 8:8)

1. Institut sinteticheskikh i natural'nykh dushistykh veshchestv, Moskva.
(Vapor pressure) (Essences and essential oils)

VOYTKEVICH, S. A.

✓ Rate of vaporization of perfume and Eau de Cologne as the criteria for the persistency of scent. S. A. Voytkovich, V. P. Osipova and B. Ya. Reingold. *Moskovskoe Zhurno* Prom. 21, No. 2, 21-5 (1956). A comparison was made between the vaporizability of perfume (I) and Eau de Cologne (II), as determined gravimetrically under standard conditions and the persistency of their scent. It is concluded that even though I with the most persistent scent vaporized at the slowest rate, persistency of different I and II could not be compared by this method. The method is useful, however, when the stabilizing effect of various compounds on persistency for the same I and II are investigated.

Vladimir S. Krukovsky.

U.S. Union. Sci. Ind. Synthet. & Natural. Res. Inst. 22

VOYTKEVICH, S.A., kandidat tekhnicheskikh nauk.

The book of R.A.Fridman ("Perfumery." R.A.Fridman. Reviewed by S.A. Voitkevich). Masl.-zhir.prom. 22 no.6:34-36 '56. (MLRA 9:10)
(Perfumery)

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 21/35

Authors : Serpinskiy, V. V.; Voytkevich, S. A.; and Lyuboshits, N. Yu.

Title : Determination of the saturated vapor pressure of certain aromatic principles

Periodical : Zhur. fiz. khim. 30/1, 177-183, Jan 1956

Abstract : The saturated vapor pressures of p-methylacetophenone, gamma-phenylpropyl alcohol, nitrobenzene, ethylbenzene, and benzophenone were measured in the temperature range 20-40°C. All aromatic principles studied were found to be in equilibrium with the liquid state only. Benzophenone was studied in the temperature range 20-40°C. It was found that the vapor pressures of p-methylacetophenone and gamma-phenylpropyl alcohol are different for different materials, and that the vapor pressures of nitrobenzene and ethylbenzene are different for different materials. Tables, graphs.

Institution : Inst. of Synthetic and Natural Aromatic Principles, Moscow

Submitted : June 16, 1955

Voytkovich, S.A.

ALEKSEYEV, Nikolay Dmitriyevich; MARCHENKO, Taisiya Timofeyevna;
VOYTKOVICH, S.A., retsenzent; BLIZNYAK, V.V., retsenzent;
BIRKGAN, Yu.B., spetsredaktor; KHMEL'NITSKAYA, A.Z., red.;
CHUMBYSHOVA, Ye.A., tekhn.red.

[Engineering equipment for the production of essential and synthetic
oils, perfums and cosmetics] Tekhnologicheskoe oborudovanie efiro-
maslichnogo, sinteticheskogo i parfiumerno-kosmeticheskogo prois-
vodstv. Moskva, Pishchepromizdat, 1957. 379 p. (MIRA 11:2)
(Perfumes, Synthetic) (Cosmetics)

VOYTKOVICH, S.A., kandidat khimicheskikh nauk.; LYUBOSHITS, N.Yu.

Effect of the saturated vapor pressure on the rate of evaporation
of aromatic substances. Masl.-shir. prom. 23 no.4:20-27 '57.

(MIRA 10:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh
i natural'nykh dushistykh veshchestv.
(Essences and essential oils)

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R001861120013-8

VOYIK E KICR, S.A.

APPROVED FOR RELEASE: 08/09/2001

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APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R001861120013-8"

SOKOL'NIKOV, N.P., inzh.; KONDRATSKIY, A.P., prof. [deceased]; VOYTEKOVICH,
S.A., kand.khim.nauk, retsenzent; SKVORTSOVA, N.I., kand.khim.
nauk, spetsred.; KALMENS, R.I., red.; DOBUZHINSKAYA, L.V.,
tekhn.red.

[Production of essential oils] Tekhnologiya efiromaslichnogo
proizvodstva. Moskva, Pishchepromizdat, 1958. 201 p. (MIRA 12:6)
(Essences and essential oils)

SERPINSKIY, V.V.; VOYTKEVICH, S.A.; LYUBOSHITS, N.Yu.

Results of determining the saturated vapor pressures of 36
odorous substances. Trudy VNIISKDV no.4:125-130 '58.
(MIRA 12:5)

(Essences and essential oils)
(Vapor pressure)

KASHNIKOV, V.V.; VOYTKEVICH, S.A.; BLYUMENFEL'D; BURMISTROV, M.P.

Utilization of ultraviolet absorption spectra for determining
the characteristics of odorous substances and analyzing
some two-component mixtures. Trudy VNIISHDV no.4:130-137 '58.
(MIRA 12:5)

(Odorous substances--Analysis)
(Spectrum, Ultraviolet)

ZELENETSKIY, N.N., inzh.; KASHNIKOV, V.V., inzh.; VOYTKEVICH, S.A., kand.
khim.nauk; GEL'PERIN, N.I., doktor tekhn.nauk

Continuous fractional vacuum distillation of coriander oil.
Masl.-zhir.prom. 25 no.5:29-33 '59. (MIRA 12:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh i
natural'nykh dushistykh veshchestv (for Zelenetskiy, Kashnikov, Voyt-
kevich). 2. Moskovskiy institut tonkoy khimicheskoy tekhnologii im.
M.V. Lomonosova (for Gel'perin).
(Coriander) (Distillation, Fractional)

VOYTKEVICH, S.A.

Surface tension and vapor pressure of liquid organic compounds. Part . 4. Zhur. fiz. khim. 39 no. 1:158-160 Ja '65
(MIRA 19:1)

1. Vsesoyuznyy institut sinteticheskikh i natural'nykh dushistykh veshchestv. Submitted December 17, 1963.

VOYTKOVICH, S.I.

Surface tension and vapor pressure of liquid organic compounds.
Part 3. Zhur. fiz. khim. 38 no.6:1666-1668 Je '64.

(MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh
i natural'nykh dushistykh veshchestv.

VOYTKEVICH, S.A.

Determination of the saturated vapor pressure of some odorous
substances. Report No.7. Trudy VNIISNDV no.6:91-92 '63.
(MIRA 17:4)

VOYTKEVICH, S.A.

Surface tension and vapor pressure of liquid organic compounds.
Part 1. Zhur. fiz. khim. 37 no.5:1029-1036 My '63.

(MIRA 17:1)

1. Institut sinteticheskikh i natural'nykh dushistykh veshchestv.

VOYTKEVICH, S.A.

Surface tension and vapor pressure of liquid organic compounds.
Part 2: Alkyl halides, carboxylic acids, and acyclic alcohols.
Zhur. fiz. khim. 37 no.6:1349-1354 Je '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh
i natural'nykh dushistykh veshchestv.

(Organic compounds) (Vapor pressure)
(Surface tension)

FRANKINA, N.S.; VOYTKEVICH, S.A.; GEL'PERIN, N.I.; OGORODNIKOVA, Ye.A.:
DUCHINSKAYA, Yu.I.

Separating C_{13} - C_{17} tetrachloroalkanes from telomer mixtures.
Trudy VNIISNDV no. 5:85-92 '61. (MIRA 14:10)
(Polymers) (Paraffins)

FRUMKINA, N.S.; ZELENETSKIY, H.H.; VOYTKEVICH, S.A.; GEL'PERIN, N.I.

Separation of macrocyclic lactones by vacuum rectification.
Trudy VNIISNDV no.5:93-98 '61. (MIRA 14:10)
(Lactones) (Rectification)

KASHNIKOV, V.V.; VOYTKEVICH, S.A.; GEL'PERIN, N.I.

Continuous method for manufacturing benzyl acetate. Trudy
VNIISNDV no.5:107-110 '61. (MIRA 14:10)
(Acetic acid)

KISELEVA, Ye.N.; VOYTKEVICH, S.A.

Extracting raw essential oil with methylene chloride, carbon
tetrachloride, and water solutions of surface-active substances.
Trudy VNIISNDV no.5:116-120 '61. (MIRA 14:10)

(Essences and essential oils)
(Extraction (Chemistry))

SVADKOVSKAYA, G.E.; SOLOV'YEVA, N.P.; SMOL'YANINOVA, Ye.K.; BELOV, V.N.;
VOYTKEVICH, S.A.

Preparation of 16-hydroxyhexadecanoic acid by the "cross" electro-
condensation method. Part 3: Electrocondensation of monoesters of
azelaic acid with acyl derivatives of 9-hydroxynonanoic acid.
Zhur.ob.khim. 31 no.9:2877-2879 S '61. (MIRA 14:9)
(Azelaic acid) (Nonanoic acid)

SOLOV'YEVA, N.P., kand.khim.nauk; OSIPOVA, V.P., kand.khim.nauk; VOYTKEVICH,
S.A., kand.khim.nauk; BELOV, V.N., doktor khim.nauk

Production of oxalactones and their characteristics. Masl.-zhir.
prom. 27 no.5:34-36 My '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh
i natural'nykh dushistykh veshchestv.
(Lactones)

VOYTKEVICH, S.A., kand.khimicheskikh nauk; IASKINA, Ye.D., kand.khimicheskikh nauk

Modern methods for the production of vanillin and its analogs.
Zhur. VKHO 5 no.4:386-395 '60. (MIRA 13:12)
(Vanillin)

FRUMKINA, N.S.; ZELENETSKIY, N.N.; VOYTKEVICH, S.A.; GEL'PERIN, N.I.

Separation of macrocyclic lactones by the vacuum-rectification
method. Zhur. VKHO 5 no. 5:595-596 '60. (MIRA 13:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut dushistykh
veshchestv.

(Lactones)

VOYTKEVICH S.S.

Preparation of butyric acid by electric oxidation of H-butanol
in an apparatus without diaphragm. Trudy VNIISNDV no.2:155-156 '54.
(MLRA 10:7)

(Butyric acid) (Electrolysis) (Butyl alcohol)

VOYTKEVICH, S.A., kand.khim.nauk

Manufacture of odorous substances and essential oils in
the Chinese People's Republic. Manl.-shir.prom. 25 no.11:
7-13 '59. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteti-
cheskikh i natural'nykh dushistykh veshchestv.
(China--Odorous substances)
(China--Essences and essential oils)

ACCESSION NR: AP4029527

S/0239/64/050/004/0496/0501

AUTHOR: Voytkevich, V. I.

TITLE: Chronic hypoxia effect on blood serum hemopoietic activity of white rats over several generations

SOURCE: Fiziologicheskii zhurnal SSSR, v. 50, no. 4, 1964, 496-501

TOPIC TAGS: chronic hypoxia effect, blood serum hemopoietic activity, protective hemopoietic reaction, thirteenth generation protective reaction, blood serum hemopoietic factor, hemoglobin level, erythrocyte number, protective hemopoietic reaction duration

ABSTRACT: The present study was carried out to determine whether experimental white rats under chronic conditions for 13 generations display the protective reaction of increased hemopoiesis as found in the first generation. The experimental rats were placed in a hypoxia chamber (10 m³) which was continuously supplied with a gas mixture of 89.5% nitrogen and 10.5% oxygen. The animals were under hypoxic conditions for 12 hrs a day and the chamber doors were open the other 12 hrs. Carbon dioxide and moisture were absorbed by soda lime and

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ACCESSION NR: AP4029527

silica gel. The experimental animals and the following 12 generations spent their entire lives in the chamber under chronic hypoxic conditions. Control animals lived under normal atmospheric conditions. Hemopoietic factor level in the blood serum, hemoglobin level, and number of erythrocytes in the peripheral blood were investigated in the 1st, 2nd, and 13th generations. Blood for all investigations was taken from the left ventricle of the heart. The hemopoietic factor determined by a leukocyte layer culture method is based on the capacity of hemopoietic active substances to stimulate the migration of leukocyte layer culture cells and is expressed as a migration index. Thus, the more hemopoietins in the investigated fluid, the larger the cell migration zone around the piece of tissue culture should be. Findings show that in the 1st, 2nd, and 13th generations of experimental animals the hemopoietic factor level, hemoglobin level, and number of erythrocytes in the peripheral blood are all significantly higher than in control animals and have approximately the same values regardless of generation. A group of first generation experimental animals living under chronic hypoxic conditions for 2 1/2 months and 1 month under normal conditions was investigated to find the length of time the increased levels are preserved. All the increased levels were

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ACCESSION NR: AP4029527

found to be normal after one month. The same protective hemopoietic reaction of hypoxic animals regardless of generation appears to be the result of their extreme state under hypoxic conditions and is expressed by a maximum value in practically all cases. Orig. art. has: 2 tables and 2 formulas.

ASSOCIATION: Laboratoriya eksperimental'noy i klinicheskoy gematologii Instituta fiziologii im. I. P. Pavlova AN SSSR, Leningrad (Experimental and Clinical Hematology Laboratory of the Physiology Institute, AN SSSR)

SUBMITTED: 07May63

ENCL: 00

SUB CODE: 1S

NR REF SOV: 012

OTHER: 017

Card 3/3

VOYTKEVICH, V. I.

USSR/Medicine - Oxygen Saturation of Blood Jul/Aug 52

"The Regulation of the Oxygen Saturation of the Blood by Conditioned Reflexes," V.I. Voytkovich, Inst of Physiol im I.P. Pavlov, Acad Sci USSR, Leningrad

Fiziol Zhur SSSR, Vol 38, No 4, pp 452-458

The O₂ satn of arterial blood at sea level generally amounts to 95-96%. It has been shown that in healthy men satn remains practically const and does not change when work of moderate difficulty is performed (Krens, Shipalov, Bolotinskiy, Voytkovich-1952). The author studied the possibility that

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conditioned reflexes may form in response to hypoxemic irritants; he also wished to clarify the effect of conditioned reflex regulation of respiration when O₂ pressure in the blood is lowered. He measured the O₂ satn of arterial blood when breathing atm air or a gas mixt of low O₂ content and studied the effect of light phys² labor on O₂ satn of the blood. He then established that conditioned reflexes counteracting hypoxemia may be induced by any indifferent irritant (e.g. sound of metronome, a spoken word).

273T38

VOYTKOVICH, V.I., kandidat meditsinskikh nauk; SHUTYGIN, D.Ya., kandidat meditsinskikh nauk.

Oxyhemometric investigation in cardiovascular diseases and in Basedow's disease; preliminary report. Terap.arkh. 25 no.5:29-34 S-0 '53. (MLRA 7:1)

1. Iz Instituta fiziologii im. I.P.Pavlova (direktor - akademik K.M.Bykov) Akademii nauk SSSR i iz Voenno-meditsinskoy akademii im.S.M.Kirova.

(Blood--Examination) (Cardiovascular system--Diseases)
(Grave's disease)

Voytkovich, V. I.
USSR/Medicine - Physiology

FD-919

Card 1/1 Sub 33-2/29

Author : Voytkovich, V. I.

Title : Effect of sleep on saturation of arterial blood with oxygen

Periodical : Fiziol. zhur. 40, 269-273, May/Jun 1954

Abstract : Results of 14 experiments conducted on 6 people revealed that amount of oxygen in the arterial blood decreases during either natural sleep or during sleep induced by soporific drugs or narcotics. It was estimated that oxygen content in blood drops 1.5-4% and remains at that level throughout the entire period of sleep. This is explained by the fact that sleep is sort of a protracted inhibition which is accompanied by reduction in excitability of the respiratory center resulting in retardation of respiratory rate. Experiments like that are of great interest due to extensive use of sleep therapy in the treatment of many diseases. Diagrams. Three Soviet and three non-Soviet references.

Institution : Laboratory of Comparative Biochemistry of the Central Nervous System, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

Submitted : April 1953

SVADKOVSKAYA, G.E., VOYTKEVICH, S.A.

Electrolytic condensation of carboxylic acids. Usp. khim. 29
no. 3:364-403 Mr '60. (MIRA 13:8)

1. Nauchno-issledovatel'skiy institut sinteticheskikh i natural'-
nykh dushistykh veshchestv.
(Acids, Organic) (Condensation products)
(Electrochemistry)

VOITKEVICH, V.I.

Results of oxyhemometric investigations under Alpine conditions.
Fiziol.zhur. (Ukr.) 1 no.4:121-129 J1-Ag '55. (MLRA 9:11)

1. Institut fiziologii im. I.P.Pavlova Akademii nauk SSSR i Institut fiziologii im. O.O.Bogomol'tsa Akademii nauk URSR.

(BLOOD,

oxygen, in high altitude, determ.)

(OXYGEN, in blood,

in high altitude, determ.)

(ALTITUDE, effects,

on blood oxygen, determ.)

USSR/Medicine - Physiology

FD-2457

Card 1/1 Pub 33/8-24

Author : Voytkovich, V. I.

Title : ~~Effect of muscular work on the arterial oxygen saturation in normal conditions and in hypoxia~~
Effect of muscular work on the arterial oxygen saturation in normal conditions and in hypoxia

Periodical : Fiziol. zhur. 2, 219-226, Mar-Apr 1955

Abstract : Breathing of 13% O₂ mixture produced a drop of arterial O₂ saturation in all subjects at rest (44 men, 7 women), but there was large inter-individual variability as to the speed and extent of the changes. Moderate muscular work (26 knee bends in 2') did not change significantly the arterial O₂ saturation, but hard work (52 knee bends in 2') might produce a drop (11 men; 1 woman), which can be prevented by breathing 100% O₂. However, even light work might easily produce a drop of arterial O₂ saturation, while breathing mixtures with low O₂ content. The tolerance for the combined stress of hypoxia and work is greatly improved by training. Graphs. Six references, all USSR (all since 1940).

Institution: Laboratory of Comparative Biochemistry of the Central Nervous System of the Institute of Physiology imeni I. P. Pavlov of the Academy of Sciences USSR, Leningrad

Submitted : November 2, 1953

VOYTKEVICH, V.I.

Effect of chronic oxygen insufficiency on the hematopoietic activity of the blood serum of white rats in a number of generations. Fiziol. zhur. 50 no.4:496-501 Ap '64, (MIRA 18:4)

1. Laboratoriya eksperimental'noy i klinicheskoy gematologii
Instituta fiziologii imeni Pavlova AN SSSR, Leningrad.

AUTHOR: Voytkovich, V. I.

TITLE: Effect of chronic oxygen deficiency on oxyhemoglobin dissociation curves in successive generations of white rats

SOURCE: Fiziologicheskij zhurnal SSSR, v. 49, no. 5, 1963, 615-620

TOPIC TAGS: hypoxia, hemoglobin, dissociation curve, acclimatization

ABSTRACT: Can hemoglobin properties change as a result of acclimatization to hypoxic conditions? The author investigated the problem using oxyhemoglobin dissociation curves as a basic index of hemoglobin qualitative characteristics. Thirteen generations of white rats who lived and multiplied in an "hypoxic chamber" (described in an earlier work) were studied. An oximeter was used to determine oxygen saturation of the blood and dissociation curves for generations I-III and X-XIII were plotted. No shifts in dissociation curves are found for generations I-III. Shifts are found in 25% of the cases for generations II-III and in 55% of the cases for generations X-XIII. The shifts in the dissociation curves takes place to the left or right or simultaneously in both directions, and all of them exceed variability limits for control rats. The author concludes that hemoglobin pro-

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ACCESSION NR: AP3001501

parties can change in successive generations of rats acclimatizing to oxygen deficiency. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Institut Fiziologii im. I. P. Pavlova AN SSSR, Leningrad (Institute of Physiology, AN SSSR)

SUBMITTED: 01Jun62

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: AM

NO REF SOV: 006

OTHER: 010

Card 2/2

VOYTKEVICH, V.I.

The effect of chronic oxygen deficiency on oxygenoglobin dissociation curves in successive generations of white rats.
Fiziol. zhur. 49 no.5:615-620 Ky '63.

(MIRA 17:11)

1. From the Pavlov Institute of Physiology, Leningrad.

VOITKEVICH, V.I.

Hemopoietic activity of human blood serum following the cessation
of the action of a chronic hypoxic factor. Dokl. AN SSSR 148
no.5:1221-1223 F '63. (MIRA 16:3)

1. Institut fiziologii im. I.P.Pavlova AN SSSR. Predstavleno
akademikom V.N.Chernigovskim.
(ANOXEMIA) (HEMOPOIETIC SYSTEM)

S/020/63/148/005/029/029
B144/B186

AUTHOR: Voytkovich, V. I.

TITLE: Hemopoietic activity of human blood serum after cessation of the effect of a chronic hypoxia factor

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 5, 1963, 1221-1223

TEXT: Hemopoietic serum activity was studied in 21 mountaineers kept for 20 days at 2000 m, with 4 ascents to 4000 m. The hemopoietic activity was studied 11 - 15, 20 - 24 and 45 - 67 days after their return from the mountains, based on the stimulation of cell migration in leucocytic-membrane cultures by hemopoietic agents. Pieces of leucocytic membrane mixed with the nutrient (1:1 mixture of human and rabbit blood sera) and the serum to be studied were kept for 6 hrs in a thermostat, and then photos were taken. The migration factor was calculated from $(S_2 - S_1)/S_1$ (S_1 being the area of the leucocytic membrane and S_2 being S_1 + migration-zone area). Then the average migration-zone parameter was calculated in control and test cultures; that of the controls was taken as 100 %. The hemopoietic activity is expressed by the ratio in % between the average migration-zone parameters

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Hemopoietic activity of human...

S/020/63/148/005/029/029
B144/B186

of test culture and control. The hemopoietic activity was 40 ± 4 before the departure, and increased to 193 ± 8 , measured 10 - 15 days after the return; then it decreased gradually to 28 ± 10 . 10 - 15 days after the return, the number of erythrocytes and the hemoglobin content were both higher than the initial values. Maximum adaptation was thus observed ~ 14 days after cessation of the oxygen deficiency. There are 2 figures.

ASSOCIATION: Institut fiziologii im. I. P. Pavlova Akademii nauk SSSR
(Institute of Physiology imeni I. P. Pavlov of the Academy of
Sciences USSR)

PRESENTED: July 18, 1962, by V. N. Chernigovskiy, Academician

SUBMITTED: July 16, 1962

Card 2/2

VOYTKEVICH, V.I.

Changes in the blood volume of the brain and in the hemoglobin level of blood in rats acclimatized to chronic hypoxia and in their progeny. *Fiziol.zhur.* 46 no.1:78-83 Ja '60. (MIRA 13:5)

1. From the laboratory of comparative biochemistry, the U.S.S.R. Academy of Sciences I.P. Pavlov Institute of Physiology, Leningrad.

(BRAIN blood supply)
(HEMOGLOBIN)
(ANOXIA exper.)

VOYTKEVICH, Z.S., inzh.

Mechanizing the manufacture of upright pianos. Mekh. i avtom. proizv.
16 no.6:34-36 Ja '62. (MIRA 15:6)

- (Borisov--Piano--Construction)

ACCESSION NR: AP4038142

S/0238/64/010/003/0360/0366

AUTHOR: Voytkevych, V. I. (Voytkovich, V. I.)

TITLE: Problems of organism adaptation to chronic hypoxia

SOURCE: Fiziologichnyy zhurnal, v. 10, no. 3, 1964, 360-366

TOPIC TAGS: hypoxia, chronic hypoxia, erythrocyte count, hematopoiesis

ABSTRACT: A study is made of the effect of chronic hypoxia on the circulatory system and blood supply to the brain in white rats and humans. White rats were placed in a special chamber and exposed to conditions of hypoxia for 30 days. This resulted in a 46% increase in the blood content of the brain. The same increase in the blood content was observed in the "hypoxic" rats of subsequent generations up to the seventh. It usually lasted for a period of 3 to 6 months after exposure. The effect of chronic hypoxia on man was investigated during mountain climbing, at altitudes ranging from 2000 to 4000 m, and during descent from the mountain. Chronic hypoxia

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ACCESSION NR: AP4038142

produced an increase in the erythrocyte count and in the amount of hemoglobin in the peripheral blood of both men and animals. A slight increase in the amount of hemoglobin and erythrocytes was still observed 5 to 10 days after exposure to hypoxia; 30 days later the amount of hemoglobin and erythrocytes had almost returned to normal. A study of the effect of chronic hypoxia on the mechanism of changes in hematopoiesis gave the following data: 1) the blood serum of the first, second, and thirteenth generations of "hypoxic" rats contained more hematopoietic substances than the blood serum of the control animals; 2) the amount of hematopoietins in the blood serum of the mountain climbers 10 to 15 days after their descent from the mountain was significantly higher than normal, i.e., before climbing the mountain. Twenty to 24 hours after the descent, a slight increase in the amount of hematopoietins was still observed; 45 to 67 days after the descent, the hematopoietic activity was even slightly lower than normal. Orig. art. has: 3 figures.

ASSOCIATION: Terapevty*chny*sektor Insty*ntu fiziologiyi im. I. P. Pavlova Akademiyi nauk SRSR (Therapeutic Department of the Institute of Physiology, Academy of Sciences SRSR)

Card 2/3

ACCESSION NR: AP4038142

SUBMITTED: 27Aug62

DATE ACQ: 12Jun64

ENCL: 00

SUB CODE: LS

NO REF SOV: 015

OTHER: 012

Card 3/3

ACC NR: AT6036523

SOURCE CODE: UR/0000/66/000/000/0101/0102

AUTHOR: Voytkovich, V. I.

ORG: none

TITLE: Some adaptation reactions of the blood system in humans and animals under conditions of prolonged oxygen starvation [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966.]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 101-102

TOPIC TAGS: hypoxia, hematology, hematopoiesis, blood chemistry

ABSTRACT: Adaptive reactions of the blood system during prolonged oxygen starvation were studied in man and several generations of rats. The adaptive reactions under investigation included changes in peripheral arterial blood composition and hematopoietins in the serum, changes in the amount of blood present in the brain, and changes in the oxygen-fixing properties of hemoglobin.

The blood of mountain climbers was studied before ascent into the mountains, during a month's stay at an elevation of 2000 to 4000 m, and for a month after descent from the mountains. A second series of blood studies

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ACC NR: AT6036523

was done on 13 generations of white rats kept 12 hrs each day in a hypoxic atmosphere (10.5% O₂ and 89.5% N₂) at normal pressure.

After prolonged continuous exposure to oxygen deficit, the mountain climbers showed parallel increases in peripheral hemoglobin and erythrocyte counts and in hematopoietin serum activity persisting up to 2 weeks after return to normal conditions.

The results of the study of mountain climbers were confirmed by the studies on rats. Both rats kept in a hypoxic atmosphere for 2.5 months and the "hypoxic" rats in the 13-generation series showed parallel increases in hemoglobin, erythrocytes, and serum hematopoietin activity.

Both the rats exposed for a month and the rats living for 7 generations in a hypoxic atmosphere showed a 1.5-fold increase in the amount of blood in the brain, the result of reflex vasodilation and new vessel formation. This increase in cerebral circulation persisted 3 to 6 months after cessation of exposure to chronic hypoxia.

Hemoglobin oxygen-fixation properties showed change only with the second generation raised in a hypoxic atmosphere and in only 20% of the

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ACC NR: AT6036523

population; by the 10th to 13th generations, however, the incidence was 56%. This change was seen as a left shift of the upper part of the oxyhemoglobin dissociation curve and a right shift of the lower part of the curve, which is advantageous under conditions of decreased pO_2 .

It is concluded that prolonged continuous exposure to hypoxic atmospheres causes a number of adaptive protective shifts in the blood systems of both man and several generations of animals, which persist even after exposure to hypoxia ceases. Elevated hemoglobin, erythrocyte counts, and hemato-poietin activity persisted up to 2 weeks, apparently due to hematosympathetic reaction inertia and physiological conditioning mechanisms, while increased cerebral circulation, due to anatomical changes, persisted still longer (3 to 6 months). [W. A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

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